

rium for far-reaching environmental impacts. Within these contexts contradicting requirements may be formulated in view of the further development of LCA and of LCA research at ETH. Implementation-oriented research work is required on the implementation of LCA in companies, on the acceptance of LCA or certain LCIA-procedures, and on an evaluation of effects caused by applying LCA and implementing its results. SCHOLZ identified two pitfalls of LCA: On the one hand, the fragility of knowledge asks for special strategies to be capable of reacting to today's changing knowledge in science. On the other, LCA practice and research needs to overcome the claim of totality. Furthermore he highlighted that LCA is already well embedded at ETH Zurich in knowledge generation (e.g., fate analysis, toxicology), in technology development (e.g., in the building sector), and in the environmental sciences department (e.g., modelling of environmental systems). It is further planned to introduce LCA and environmental impact assessment as one part of the technical education of environmental scientists at ETH Zurich.

#### For More Information:

The thesis "Life Cycle Inventory Analysis for Decision-Making" written by R. FRISCHKNECHT is available at ESU-services, Zentralstrasse 8, CH-8610 Uster, Tel. +41-1-940 61 91, e-mail: [esu-services@access.ch](mailto:esu-services@access.ch).

It costs CHF 79.- per copy plus CHF 10.- for postage and packaging within European countries and CHF 20.- for overseas countries.

The thesis "Perspectives in Life Cycle Impact Assessment" written by P. HOFSTETTER is available in the book-trade (ISBN: 0-7923-8377-X) or directly from Kluwers via <http://www.wkap.nl/book.htm/0-7923-8377-X>.

The thesis of C. POHL is in printing. If you would like to be informed as soon as it is available, please send an e-mail with your address to Christian Pohl ([pohl@collegium.ethz.ch](mailto:pohl@collegium.ethz.ch)).

The thesis "Unsicherheit und Fuzziness in ökologischen Bewertungen – Orientierungen zu einer robusten Praxis der Ökobilanzierung" written by M. Ros is available at Matjaz Ros, Tobeleggweg 4, CH-8049 Zurich, e-mail: [ros@uns.umnv.ethz.ch](mailto:ros@uns.umnv.ethz.ch)

It costs CHF 49.- per copy plus CHF 10.- for postage and packaging within European countries and CHF 20.- for overseas countries.

For more information about research activities of Profs. K. HUNGERBÜHLER, R. SCHOLZ and D. SPRENG at ETH Zurich you may visit the following web-sites:

Prof. Dr. K. HUNGERBÜHLER: <http://www.chem.ethz.ch/D-CHEM-Prof/hungerbuehler/hungerb.html>

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## Software Corner

### Environmental Data, Analysis and Comparison for Corrugated Packaging

Since 1994, three European Associations have been working together to provide industry and its customers with up-to-date knowledge based on facts which concern the impact of industry on the environment. This knowledge helps to integrate environmental affairs into decision making. It is the basis for product and process improvements, thus enabling a responsible and pro-active industry attitude towards the environment.

#### The three Associations are:

- FEFCO (European Federation of Corrugated Board Manufacturers)
- GO (Groupement Ondulé, European Association of makers of Corrugated Base Papers)
- KI (Kraft Institute, Association of the Virgin Fibre Based Producers of Corrugated Board Materials in Europe)

Each Association regularly collects environmental data from its members. The weighted averages of the collected data are published together in a report "European Database for Corrugated Life Cycle Studies". The Associations have developed standardised LCA (software tool) that is based on the data and methodology as described in the report.

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#### European Database for Corrugated Life Cycle Studies

##### The report contains:

- Descriptions of the production systems
- Methodology questions
- Data for consumption of raw materials, additives and water
- Data for emissions to air, water and waste

#### LCA software-tool for corrugated packaging

A special LCA software-tool for corrugated board has been developed for members of the three Associations; it is, however, also available for non-members through FEFCO. It is designed for users that have only elementary knowledge of LCA. It is based on SimaPro 4 from Pré Consultants. The software uses the most recent data from the report "European Database for Corrugated Life Cycle Studies" and the closed-loop approach as a basis for the calculations. It enables the user to enter data according to his own situation (box design, transportation distances, etc.) and analyses and compares different options.